

PATENT COOPERATION TREATY



Translation

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A 54 616 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/008031	International filing date (day/month/year) 23 July 2003 (23.07.2003)	Priority date (day/month/year) 23 July 2002 (23.07.2002)
International Patent Classification (IPC) or national classification and IPC B23K 35/02		
Applicant KOMET GROUP HOLDING GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 06 February 2004 (06.02.2004)	Date of completion of this report 10 August 2004 (10.08.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/008031

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-12, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-35, filed with the letter of 29 July 2004 (29.07.2004)
- ☒ the drawings:
 pages 1/5-5/5, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-26 and 28-35, as far as these refer to one of the claims 24-26

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

See supplemental sheet.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26, 28-35	YES
	Claims		NO
Inventive step (IS)	Claims	1-26, 28-35	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-26, 28-35	YES
	Claims		NO

2. Citations and explanations

See supplemental sheet.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV and V

1. The two documents
D1 (DE-A-27 35 638), examples 1 and 2, and
D2 (US-A-4 431 465), abstract and example 1
describe the use of a solder paste containing
spherical particles of nickel or nickel and copper
(D1) or iron or nickel (D2) (the latter material
corresponds to dependent claim 16 and thus has a
lower coefficient of thermal expansion than the
solder material) for soldering tungsten carbide
(tool) components having a holder component or
shank made of steel. Both documents mention that
the particles reduce the stresses which occur
within the solder layer as a result of the
different coefficients of thermal expansion of the
tungsten carbide and steel; cf. D1: page 4, last
paragraph; page 5, middle paragraph; and D2:
abstract; column 1, last line; column 2, line 15.
2. The claimed subjects differ from the closest prior
art (D1 or D2) at least in that the coefficient of
thermal expansion of the solder joint layer 18'
varies, i.e. differs, throughout the thickness
thereof; in contrast to the prior art, the joint
layer 18' can be formed from two different solder
discs having different coefficients of thermal
expansion or from one solder disc having inherently
differing coefficients of thermal expansion.
Therefore novelty is established.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV and V

Inventive step is recognized since no document contains anything to suggest a solder joint layer having coefficients of thermal expansion that differ throughout the thickness of the layer, the varying coefficient having the advantage that it can further reduce inner stresses which occur in the joint region during cooling after soldering.

3. There is therefore a lack of unity between claim 27 and claims 1 to 26 (PCT Rule 13.1 to 13.3) since it does not contain the novel feature of the coefficients of thermal expansion that vary throughout the thickness of the solder joint layer or even a corresponding feature. The applicant did not respond to the invitation to restrict the claims or drop claim 27. Therefore the present report refers only to claims 1 to 26 and claims 28 to 35 insofar as the latter refer back to one of claims 24 to 26, which are covered by this report and concern the main invention (PCT Article 34(3)).